

Dear FCC,

This is in response to a specific request for comments in item 16 on page 10 of the NOTICE OF PROPOSED RULEMAKING AND ORDER, WT Docket No. 04-140.

Background: I have been an active radio amateur for a little over 50 years and during most of that time active in the various digital modes on the HF bands. I am also a practicing engineer in the communications and computer field and though partially retired I am currently retained in a technical consulting capacity by Globe Wireless, a maritime communications service provider.

I recently chaired the ARRL Ad Hoc HF Digital Committee that was formed to study the future needs for amateur HF digital operations. The report of that committee can be found at:

<http://www.arrl.org/announce/reports-0307/hf-digital.html>

Comments: In item 16 reference is made to including images as allowable content in digital transmissions but limited to 500 Hz bandwidth. The implication is that digital modes are in general are limited to 500 Hz on the HF modes. While I agree that images should be allowable message content the limitation to 500 Hz bandwidth is not consistent with current rules, amateur practice, nor is it desirable.

The current rules limit HF digital modes to a symbol rate of 300 or less symbols per second but do not specify any bandwidth limitation other than 97.307(a) that says bandwidths should not be any wider than needed in accordance with current amateur practice. Current amateur practice currently includes digital modes that are wider than 500 Hz. 300 baud HF packet takes approximately 1500 Hz of bandwidth but the most noted example is Pactor 3 that can transmit up to 3600 bits per second in a nominal bandwidth of 2100 Hz. The symbol rate for Pactor 3 is well under 300 symbols per second.

I personally believe that at least the following four ARRL digital committee recommendations should be encoded in the rules:

1. The bandwidth used should not be greater than required for efficient use of the spectrum. 97.307(a) already says this.
2. On the HF bands digital bandwidths should be limited to 3000 Hz (not 500 Hz) and any form of record content be allowed including images.
3. Any digital data protocol that is publicly disclosed with sufficient detail that anyone skilled in the art could duplicate it may be used (within the limits of 1 and 2 above).
4. A digital data protocol that is not publicly disclosed should be allowed for brief periods of time provided that the transmitting station identifies itself clearly with CW or SSB (where SSB is allowed). New modes should also be subject to 1 and 2 above.

These recommendations imply eliminating the 300 symbols per second limitation specified in 97.307(f) (3) and the 1200 symbols per second limitation specified in 97.307(f) (4). It also implies eliminating 97.309, those provisions being obsolete in light of today's modes of operation. These recommendations streamline the rules and make their interpretation less uncertain.

Digital operations should be allowed bandwidths sufficient to provide room for innovation and improvement in the state of the art. The actual bandwidth/time used by wider digital bandwidth modes actually prove to be more spectrum efficient than many slower 'keyboard' modes.

I should add that the same rules would be just as appropriate for HF digital voice operation where voice is allowed.

By the last estimate that I have seen there are on the order of 2000 amateurs actively using Pactor 3 on the HF bands. In public service and emergency operations the higher speed digital modes are and will continue to prove to be essential.

Sincerely,

Victor Poor, W5SMM